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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,700	01/26/2001	George Robert Summers	33277	6807

116 7590 11/17/2003

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EXAMINER

BERMAN, JACK I

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

11

<b>Office Action Summary</b>	<b>Application No.</b> 09/770,700	<b>Applicant(s)</b> SUMMERS ET AL.	
	<b>Examiner</b> Jack I. Berman	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-9, 11-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-9, 11-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-9, 11-14, 16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bach in view of Pick et al. and Summers. Bach discloses a quick-install irradiation unit for irradiating the inside of an air duct, the unit comprising an elongated support frame (lamp cartridges 22, 24, as illustrated in Figures 4, 5a, 5b, 6a, and 6b, and including connectors 82, as is illustrated in Figure 10 and described at lines 57 in column 7 through 2 in column 8) for supporting an ultraviolet lamp (26, 28), the frame being configured to be mountable at only one end thereof, and a mounting bracket (main housing 30) for receiving the one end of the frame for mounting the frame to a flat support surface (the surface of the duct), so that the ultraviolet lamp is supported inside the duct, the elongated support frame comprises a housing at one end (cap 40), the housing being receivable in an open end of the mounting bracket (apertures 55a, 55b) and releasably locked therein. In the preferred embodiment, the lamp is

wired at only one end to an electric power source (ballasts 46, 48) that is supported on the one end of the frame securing the housing. Bach does not disclose means for focusing radiation emitted by the lamps onto a surface. Pick et al., however, teaches, in the BACKGROUND OF THE INVENTION, that merely irradiating the air in a duct, as Bach does, is of limited effectiveness in destroying airborne microorganisms. Pick et al. teaches to improve the effectiveness of the ultraviolet radiation by providing a filter in the duct to remove particulate matter including at least a portion of microorganisms from the air stream in the duct and, in the embodiments illustrated in Figures 7-9 and 11-15, moving an ultraviolet lamp (84), which generates ozone as well as ultraviolet radiation as is pointed out at lines 35-38 in column 9, and an associated reflector (88) across the surface of the filter (20, 28) to direct the ultraviolet radiation at the filter, thereby destroying microorganisms trapped on the filter. Summers refers to the Pick et al. apparatus and teaches to improve the irradiation of the filter by focusing the radiation onto the filter, using either an elongated reflector (36) alone or an elongated reflector (52) in combination with an elongated lens (54), instead of merely directing it as Pick et al. teaches, and to move the means for focusing reciprocally by means of a gear reduction motor (38) and a cam assembly (42) supported by a housing (cabinet 12) and operatively connected to the means for focusing. Summers further teaches, at lines 8- 14 in column 5, to make the reflector with a polished side positioned next to the lamp. It would have been obvious to a person having ordinary skill in the art to provide a surface that collects or supports growth of microorganisms inside a duct of the type discussed by Bach, to provide this surface at a position where it can be irradiated by Bach's lamp in order to more effectively destroy microorganisms, in the manner disclosed by Pick et al., and to provide Bach's frame for supporting both ends of

an ultraviolet lamp with a means for focusing the ultraviolet radiation emitted by the lamp onto the surface and means for moving the means for focusing, in the manner disclosed by Summers, to further increase the effectiveness. The making of Bach's irradiation unit modified in accordance with the teachings of Pick et al. and Summers, as discussed above, would necessitate the steps of:

- a) constructing a box-shaped mounting bracket (main housing 30) having an open top end (apertures 55a, 55b) and mounting flanges (for screw holes 64a, 64b, 64c) that extend from at least two opposed side edges for mounting the mounting bracket to a flat surface (the wall of duct 12);
- b) constructing an elongated support frame having a housing (cap 40) at one end and a frame structure (connectors 82) supported by the housing, the frame structure supporting a reflector (36 or 52 from the Summers' apparatus) for supporting an elongated ultraviolet lamp (26, 28, 84 in Bach and 26 in Summers) in front of the reflector, and the housing (cap 40) being sized to be closely received in the open top end (apertures 55a, 55b) of the mounting bracket (main housing 30);
- c) constructing a mechanism (cartridge plugs 36, 37 and corresponding cartridge sockets 50, 52) for interlocking the mounting bracket and the housing so that the housing is retained in the mounting bracket when the mechanism is in a locked position, regardless of an orientation of the mounting bracket;
- d) forming the reflector (36 or 52 from the Summers' apparatus) from a sheet of metal having a polished side; and

e) mounting the reflector to swivel brackets (46 in the Summers apparatus) that permit the reflector to be oscillated around a rear side of the ultraviolet lamp and connecting a motor (38 in the Summers apparatus) to a one of the swivel brackets to oscillate the reflector.

It is common practice in the art of sheet metal production to produce sheets of aluminum by extrusion, so it would have been obvious to a person having ordinary skill in the art to use this well-known method to produce the reflector required by Summers. It would also have been obvious to a person having ordinary skill in the art to coat the inner surface of the reflector with a reflective material in order to increase the amount of radiation directed to the surface to be irradiated.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bach, Pick et al., and Summers as applied to claims 3-9, 11-14, 16, and 18-20 above, and further in view of Couch. Bach relies on the cartridge plugs (36, 37) and sockets (50, 52) to retain the housing (cap 40) in the mounting bracket (main housing 30). Couch discloses a bracket assembly to securely lock two objects together. In the embodiment illustrated in Figures 8 and 9, construction of this bracket assembly involves securing a locking pin (screw 51, illustrated in Figures 1-5 and 7) to a bottom plate (wall 47) of the mounting bracket; forming aligned openings (226, 235) in the housing (member 221) to receive the locking pin, and securing a latch member (clip-like element 222) to a pivotal mount (pivot point 240) on an external side of a top plate of the housing so that the latch member can be rotated to slide under a head (52) of the locking pin. It would have been obvious to a person having ordinary skill in the art to use Couch's bracket assembly to retain Bach's housing (cap 40) in the mounting bracket (main housing 30) more securely than Bach's

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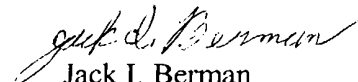
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plugs and socket arrangement since such arrangements are designed to provide electrical connections, not support the weight of an entire unit, whereas Couch's bracket assembly is designed to securely attach one object to another.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (703) 308-4849. The examiner can normally be reached on M-F (8:30-6:00) with every second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
Jack I. Berman  
Primary Examiner  
Art Unit 2881

jb  
November 6, 2003